

18, 862

THE
Academy of Natural Sciences
OF
PHILADELPHIA

ANNUAL REPORTS
1918

The following annual reports were ordered to be printed:

REPORT OF THE RECORDING SECRETARY.

While the Recording Secretary has been able personally to discharge the duties of his office during the year, he is indebted to the Assistant Librarian, William J. Fox, for indispensable coöperation, for which grateful acknowledgment is due. As was the case last year, the statistics of administration have been prepared by Mr. Fox.

Dr. J. Percy Moore and Dr. Philip P. Calvert have placed the Secretary under obligation by acting as Recording Secretary during the earlier meetings of the Academy and the Council, for which sincere thanks are given. The By-Laws provide for the closing of the academic year with the last of November. Since that period last year meetings have been held on December 18, 1917; January 15th, February 19th, March 19th, April 9th, April 16th and November 16th of the current year.

The meeting of April 9th was held in commemoration of the President, Samuel Gibson Dixon, M.D., LL.D., Sc.D., who died February 2d. Dr. Dixon had been elected a member of the Academy February 25, 1890. He had served as President since 1896. The progress of the society during the twenty-two years which have since elapsed is Dr. Dixon's best memorial. Details of his services to science will be found in the proceedings of the memorial meeting held in April. As a mark of respect to the memory of Dr. Dixon the election of his successor in the presidency was by resolution postponed until the annual meeting.

Communications were made at the meetings during the year by Messrs. Harley Stamp, Philip P. Calvert, James A. G. Rehn, Witmer Stone, Edwin G. Conklin, John Cadwalader, Benjamin F. Royer and Henry Skinner.

In addition to the Proceedings of the Dixon Memorial Meeting papers were presented for publication by Henry A. Pilsbry, F. J. Keeley, Henry W. Fowler, Anna M. Cullen, Janet P. Jameson, Mitchell Carroll, Joseph Hall Bodine, Bruce Wade, James A. G. Rehn and E. G. Vanatta.

The sixteenth volume of the JOURNAL was completed by the publication of a beautifully illustrated paper by Clarence B. Moore on the aboriginal antiquities of Florida.

Three hundred and thirty-seven pages of the PROCEEDINGS were issued with five plates.

The Entomological Section (the American Entomological Society) has published four hundred and thirty-seven pages of the TRANSACTIONS, illustrated by twenty-nine plates. Four hundred pages of the ENTOMOLOGICAL NEWS, illustrated by twenty plates, have been issued.

Parts ninety-six and ninety-seven of the MANUAL OF CONCHOL-OGY, comprising one hundred and eighty-eight pages, have been completed by Dr. Pilsbry and distributed.

Four members and seven correspondents have been elected. Their names are recorded in the PROCEEDINGS as issued.

The deaths of nine members were announced.

Resignation of membership by G. B. Heckel was accepted.

The death of Joseph Willcox, October 1st, deprived the Academy of the services of one who had been interested in the mineralogical work of the society since his election to membership in December, 1867. He had served for years as Custodian of the Isaac Lea collections, a position which he held at the time of his death.

The Ludwick Institute Free Lecture Courses were delivered at the Academy on Mondays, Thursdays and Fridays, January 7th to April 26th, by Witmer Stone, B. Franklin Royer, James A. G. Rehn, Spencer Trotter, Henry A. Pilsbry, J. Percy Moore and J. Fletcher Street. It was necessary early in the year, conforming to government regulations, to change the lectures scheduled for Monday evenings to Thursday evenings. To economize fuel it was also necessary to give a portion of the course in the more easily heated library hall. Ten of the lectures were on the natural history of Philadelphia and vicinity, especially adapted to school-children. The latter were by Messrs. Stone, Moore, Street, Pilsbry and Rehn.

Meetings of the Pennsylvania Audubon Society, the Babies' Welfare Association, and the Philadelphia Pediatric Society were held in the Lecture Hall.

EDWARD J. NOLAN, *Recording Secretary.*

REPORT OF THE CORRESPONDING SECRETARY.

The following scientific men, all Americans, were elected correspondents: John Henry Comstock, Herbert Spencer Jennings, Frank Rattray Lillie, Alfred Goldsborough Mayor, John Campbell Merriam, George Howard Parker, and Charles Richard Van Hise.

During the course of the year President Charles R. Van Hise and Prof. Samuel W. Williston died. It is probable that the interruption of correspondence with European countries prevented the verification of the reported deaths of others.

Foreign correspondence, which has been steadily decreasing during the progress of the war, fell this year to its lowest ebb.

Invitations were received to participate in the celebration of the semi-centennial of the founding of the Kansas Academy of Science and of the two-hundred-and-fiftieth anniversary of the University of Lund. Prof. Samuel W. Williston was appointed a delegate to the former and a letter of congratulation sent to the latter.

From the Académie des Sciences, Belles-Lettres et Artes de Rouen was received a copy of a resolution passed at a fête held at the Academy on July Fourth expressing admiration for the course, material and moral, taken by the United States and its President "in defense of the Liberty, Law, Justice and Civilization of the World". A letter of similar import was received from Émile Rivirée, a correspondent of the Academy.

Inquiries for information were answered as usual.

Statistics of the correspondence follow:

Communications received:

Acknowledging the receipt of the Academy's publications.....	69
Transmitting publications to the Academy.....	30
Requesting exchanges or the supply of deficiencies.....	6
Invitations to learned gatherings, celebrations, etc.....	2
Notices of deaths of scientific men.....	2
Circulars concerning the administration of scientific and educational institutions, etc.....	8
Photographs and biographies of correspondents.....	3
Letters from correspondents}	56
Miscellaneous letters.....}	

Total received..... 176

Communications forwarded:

Acknowledging gifts to the Library.....	680
Requesting the supply of deficiencies.....	155
Acknowledging gifts to the Museum.....	76
Acknowledging photographs and biographies.....	3
Letters of sympathy or congratulation, addresses, etc.....	5
Diplomas and notices of election of correspondents and delegates' credentials.....	8
Miscellaneous letters.....	121
Annual reports and circulars sent to correspondents.....	14
Total forwarded.....	1,062

Respectfully submitted,

J. PERCY MOORE, *Corresponding Secretary.*

REPORT OF THE LIBRARIAN.

The efficient services reported last year as having been rendered during the concluding months of 1917 by the Assistant Librarian, William J. Fox, have been continued and the growth of the library represented by the following report is the result:

The total additions amount to 4,503, consisting of 4,061 pamphlets and parts of periodicals, 293 volumes, 148 maps and one framed portrait.

They were received from the following sources:

Exchanges.....	2,024	James Aitken Meigs Fund.....	8
Isaiah V. Williamson Fund....	1,209	United States Department of Commerce and Labor.....	8
United States Department of Agriculture.....	688	Vermont Agricultural Experiment Station.....	8
General Appropriation for the Purchase of Books.....	88	New York State Board of Charities.....	8
Authors.....	62	Carleton College.....	7
Pennsylvania State Library....	56	Thomas B. Wilson Fund.....	6
United States Department of the Interior.....	54	Mrs. Samuel G. Dixon.....	6
Editors.....	40	South Dakota School of Mines	6
American Entomological Society	30	Edward J. Nolan.....	6
Imperial Department of Agriculture of the British West Indies.....	22	Publication Committee of the Academy.....	5
Trustees of the British Museum	16	Commission of Conservation, Canada.....	5
New York Agricultural Experiment Station.....	15	Dr. Henry Skinner.....	5
Samuel G. Gordon.....	12	Queensland Department of Mines.....	4
Secretaria de Agricultura y Fomento, Mexico.....	11	Indiana University.....	4
California State Commission of Horticulture.....	9	United States War Department	3
Cuerpo de Ingenieros de Minas del Peru.....	9	Government of India.....	3
Water Supply Commission of Pennsylvania.....	9	Witmer Stone.....	3
Utah Agricultural College Experiment Station.....	8	Department of Conservation and Development, New Jersey...	3
		California Fish and Game Commission.....	3
		Department of Fisheries, Bengal, Bihar and Orissa.....	2

University of Wyoming.....	2	William J. Fox.....	1
National Academy of Sciences..	2	Delaware Valley Ornithological	
Geological Survey of Georgia..	2	Club.....	1
New South Wales State Fish-		Estacion Sismologica de Car-	
eries.....	2	tuja.....	1
Canada Department of the In-		Iowa Geological Survey.....	1
terior.....	2	New York Archeological Asso-	
Lowell Observatory.....	2	ciation.....	1
American Iron and Steel In-		Commissioners of Fisheries and	
stitute.....	2	Game, Massachusetts.....	1
Escola Superior de Agricultura		Zoölogical Society of Philadel-	
e Medicina Veterinaria, Pin-	2	phia.....	1
heiro.....	2	Mechanics' Institute, San Fran-	
Michigan Geological and Bio-		cisco.....	1
logical Survey.....	2	Scientific Society of San An-	
Nova Scotia Department of		tonio.....	1
Agriculture.....	2	J. B. Haines.....	1
Roger Williams Park Museum	2	Government of Formosa.....	1
Florida State Geological Survey	2	Hawaiian Entomological Society	1
W. L. Abbott, M.D.....	2	D. J. Bullock.....	1
Louisiana State Museum.....	1	Department of Trade and Cus-	
Pan-American Union.....	1	toms, Australia.....	1
Clarence B. Moore.....	1	Los Angeles County Museum	
Illinois State Mining Board....	1	of Natural History and Art..	1
Universidad Nacional, Mexico..	1	Argentine Government.....	1
Board of Water Supply, New		Instituto de Butantan.....	1
York City.....	1	Art and Museum Commission-	
Observatorio de Madrid.....	1	ers, Grand Rapids.....	1
Colorado Museum of Natural		Department of Marine and	
History.....	1	Fisheries, Canada.....	1
Philip P. Calvert.....	1	St. Louis Natural History Mu-	
Scripps Institution for Biological		seum Association.....	1
Research.....	1		

They have been distributed to the various departments of the library as follows:

Journals.....	2,858	Physical Science.....	11
Agriculture.....	754	Ichthyology.....	11
Geology.....	373	Mammalogy.....	9
Geography.....	145	Conchology.....	8
Botany.....	118	Medicine.....	8
General Natural History.....	37	Mathematics.....	7
Entomology.....	25	Chemistry.....	5
Voyages and Travels.....	20	Herpetology.....	3
Mineralogy.....	19	Bibliography.....	2
Anatomy and Physiology.....	17	Helminthology.....	2
Ornithology.....	15	Philology.....	1
Anthropology.....	11	Miscellaneous.....	44

The following journals are new to the library:

American Anatomical Memoirs. Philadelphia.
 Art and Museum Commissioners, Grand Rapids. Annual Report.
 Biochemical Journal. London.
 Biological Board of Canada. Bulletin.
 Brooklyn Botanic Garden. Memoirs.
 Escola Superior de Agricultura e Medicina Veterinaria, Pinheiro. Archives.
 Geographic Society of Chicago. Publications.
 Illinois Natural History Society. Transactions.
 Instituto de Butantan. Collectanea de Trabalhos, 1901-17.

Instituto Geologico de Espana. Memorias.
 International Journal of American Linguistics. New York.
 Journal of General Physiology. Baltimore.
 Journal Russe de Zoologie. Petrograd.
 Junta de Ciencias Naturals de Barcelona. Publicacions. Series Geologica.
 Kansas Academy of Science. Bulletin.
 Kgl. Danske Videnskabernes Selskab. Biologiske Meddelelser, Matematisk-fysiske Meddelelser.
 Laboratorio de Plasmogenia de la Habana. Boletin.
 Madison Botanical Congress. Proceedings, 1893.
 New York State Archeological Association, Morgan Chapter. Researches and Transactions.
 New Zealand Journal of Science and Technology. Wellington.
 Pan American Record. Los Angeles.
 Royal Geographical Society. Supplement of the Geographical Journal.
 St. Louis Natural History Museum Association. Bulletin.
 Societa Italiana dei Microscopisti. Bollettino.
 Soil Science. New Brunswick, N. J.
 South African Institute for Medical Research. Publications.
 South Australia Director of Mines and Government Geologist. Annual Report.
 South Australian Museum. Records.
 Staten Island Institute of Arts and Sciences. Museum Bulletin.

Twelve hundred and twenty-five volumes and parts of periodicals were used on the premises, while 59 volumes were borrowed.

Four hundred and thirty-three volumes have been bound.

The resignation of Furman S. Wilde as Assistant to the Librarian was accepted. He has since been serving with the army in France.

Five hundred and nine serials and twenty-two volumes have been returned to the Superintendent of Public Documents, Washington.

The continued coöperation of Miss Wardle in library service is gratefully acknowledged.

EDWARD J. NOLAN, *Librarian*.

REPORT OF THE CURATORS.

The past year, on account of unprecedented conditions incident to the war, has not been one in which any important work outside the usual routine of the museum has been possible. Fuel restrictions have prevented the heating of the public halls and during certain days necessitated the closing of the work-rooms. One of our janitors left our employ early in the year and in order to meet additional expenses elsewhere we have managed to avoid the necessity of filling this position. The absence of several volunteer workers during most of the year, and of Mr. Rehn for several weeks, all on work connected with the war has hindered the progress of research work to some extent, while the serious illness of Dr. Skinner has kept him from his office for over two months. Notwithstanding these hindrances, however, the Curators feel that they may con-

gratulate themselves upon having been able to maintain the usual Museum activities without any detriment to the collections or their arrangement during these trying times.

Early in the summer a competent steam engineer was engaged to examine the entire heating plant and to draw up plans for remedying serious defects in the present system as well as for the installation of new boilers. We were fortunate enough to secure two Spencer boilers, which have been placed in the engine house and have already proved very satisfactory, although some of the repiping is still unfinished. The expense of these important improvements is covered by an appropriation made at the last session of the State Legislature and referred to in our last report.

The falling of certain sections of plaster ceiling has necessitated the removal of all the ceiling covering in the mineralogical hall, with the intention of substituting a sheet metal ceiling at the earliest opportunity.

Additional exhibits have been added to the collection of native trees, to the local collection of birds and nests presented by the Delaware Valley Ornithological Club, to the Clarence B. Moore collection of Indian antiquities and to the William S. Vaux collection of minerals.

Numerous classes of school-children have visited the Museum during the year and various duplicate specimens, especially sets of labelled minerals, have been presented to schools in Philadelphia and vicinity.

During the year Dr. Skinner made some important entomological collections in the White Mountains of New Hampshire.

Dr. Stone spent several weeks in making an exhaustive collection of the flora of southern Cape May County, N. J., and some local field work was carried on by other members of the Museum staff. Mr. Clarence B. Moore has also continued his explorations of the Indian mounds of the Southern States and presented the Academy with valuable material. Details of work in the several departments follow.

MAMMALS.

A number of valuable specimens received from the Zoölogical Society of Philadelphia have been prepared as skins or skeletons, while a large number of skeletons and skulls previously prepared in the rough have been macerated, numbered and placed in the study series. This work was carried on by the taxidermist, Mr. David McCadden. Besides entering accessions the entire register of the

Rhoads collection, numbering 4,390 entries, has been copied into the regular mammal catalogue.

Specimens have been loaned during the year to Dr. J. A. Allen and Mr. A. H. Howell.

BIRDS.

A number of accessions to the local collection have been placed on exhibition and much of the collection rearranged and relabelled. The services of Miss Ruth Faries were secured during nine months of the year and much needed clerical work was accomplished. Several temporary catalogues were copied into the regular Academy register, including that of the Hoopes collection, making a total of some 14,000 entries. In addition new labels were prepared for all the skins of the lower families of Passeres in the study collection, as well as of the Tanagridæ and most of the Fringillidæ.

The eggs in the Pennock collection and many of those in the Drown collection were placed in glass-covered boxes and catalogued, while many unmounted specimens of birds were converted into skin specimens.

Dr. Stone, although mainly occupied with the executive duties of the Museum, revised several of the families in the study collection and prepared a report on the Jewel collection of Panama birds, which has been published in the PROCEEDINGS.

The most notable accessions received during the year were the Mrs. W. A. Drown collection of bird eggs and mounted birds, and a collection of Colombian birds obtained by purchase.

Dr. H. C. Oberholser, Mr. W. E. C. Todd, Mr. Edwin Ashby and Mr. F. H. Kennard have made use of the collections, while specimens have been loaned to Mr. Todd, Mr. C. B. Cory and Dr. C. W. Richmond.

REPTILES AND FISHES.

Mr. Henry W. Fowler, who has had charge of the fishes as well as of the reptiles, reports that 1,783 fishes have been received during the year, which have all been catalogued and labelled. He has also critically identified some 400 species of fishes. These comprised specimens in the Academy collection from Brazil, Panama, the West Indies and Australia as well as our entire series of African fishes and a collection from Samoa loaned by Capt. C. F. Silvester, from which the Academy will receive duplicates.

Two papers were published in the PROCEEDINGS on Philippine fishes and on a collection received from Paraguay. Progress was

made on the critical study of the series of flying fishes, half-beaks and green gars.

General care of the collections (both of fishes and reptiles) has occupied considerable time, necessitating the rebottling and cleansing of many specimens.

Mr. Fowler did some field work in Perry County, Pa., and Cape May Co., N. J. Specimens of reptiles were loaned during the year to the American Museum of Natural History. Mr. Alex. Ruthven, Dr. Thomas Barbour, Mr. F. N. Blanchard and Mr. Alvin Seal spent some days in studying material at the Academy.

MOLLUSKS.

Dr. Henry A. Pilsbry, curator of Mollusca, reports that accessions to the conchological department have been received from sixty-seven persons and institutions. Among them may be mentioned a series of Congo mollusks from the American Museum of Natural History, including paratypes of many new species, and a considerable number of Hawaiian mollusks received from the Bishop Museum and from Prof. W. A. Bryan. Mr. J. H. Ferriss shared his Arizona collections of 1917 and 1918 with the Academy and Prof. Junius Henderson has presented series of his Idaho and Colorado collections.

The revision of the Academy collection of Pupillidæ has been continued in connection with the publication of a second volume on this group in the *Manual of Conchology*. In collaboration with Mr. Ferriss a report on the mollusks of the Santa Catalina mountains and the Mogollon mountains, Arizona, has been prepared for publication. Mr. E. G. Vanatta has continued the arrangement of the exhibition series of shells and Miss Caroline Ziegler has made good progress in cataloguing the specimens. Considerable time has been given to the determination of material for correspondents.

Mr. J. A. Ferriss, W. H. Clapp and Edwin Ashby have spent some time in studying in the department during the year, and specimens were loaned to Mr. E. P. Chase, Dr. Paul Bartsch and Mr. J. B. Henderson. Mr. R. T. Jackson also borrowed some fossil mollusca.

INSECTS.

The department of Entomology has had the usual care and attention given to it by those in charge. Dr. Henry Skinner and Mr. E. T. Cresson, Jr., have looked after all the orders except the Orthoptera, which have had the attention of Mr. J. A. G. Rehn. The

accessions for the year amount to 2,953 specimens, most of which have been incorporated in the collection.

A number of families have been rearranged: the Scarabæidæ, Rhipiphoridæ, Stylopidæ, Cleridæ, Malachidæ, Meloidæ and Buprestidæ in the Coleoptera; the Scathophagidæ, Sepsidæ and Ephydridæ in the Diptera, and the large series of exotic Noctuidæ among the Lepidoptera. Some valuable material in the last order collected by Dr. Skinner in the White Mountains of New Hampshire was incorporated in the collection. In the order Hemiptera the family Cicadidæ has been rearranged in accordance with identifications made by Mr. Wm. T. Davis, and in the Hymenoptera the H. L. Viereck types of *Andrena* have been placed in the type series.

In the Orthoptera besides the mounting and rearrangement of material, studies have been made of an extensive series of Brazilian material and three papers prepared and published upon it. A study has also been made of our African material as well as of several African collections loaned for identification, of which the Academy will receive a series of duplicates. A paper was also published in the PROCEEDINGS on the North American Eumastæinæ, while correspondence by Mr. Rehn has resulted in the receipt of valuable material in return for determination.

Several visiting entomologists, especially Dr. E. C. Van Dyke, have made use of the collections and material has been loaned to J. R. Malloch, J. S. Hine and R. W. Dawson.

PLANTS.

Mr. Stewardson Brown, who has had charge of the herbarium, reports that during the year the herbarium of the late Charles S. Williamson, presented by his sister Miss Mary Williamson, has been distributed throughout the herbarium so that the specimens are now readily accessible with the other material. The J. J. Carter herbarium, the gift of Mr. H. S. Gatchell, has been in a great part mounted ready for stamping and distribution. Numerous other collections received from various sources have been mounted by Miss Ada Allen, who has been continued as an aid in this work.

The local collection has received considerable attention from Mr. S. S. Van Pelt, who has mounted many specimens that have been received. Mr. Bayard Long has also given the collection considerable critical study.

MINERALS AND ROCKS.

The Curators are indebted to Mr. F. J. Keeley, Curator of the William S. Vaux collection, and to Mr. Samuel G. Gordon, a student

on the Jessup Fund, for the care of this department. Mr. Gordon has labelled and catalogued a number of accessions to the Wm. S. Vaux and the general collections and prepared a check list of the entire series. The William S. Vaux collection now numbers about 9,000 specimens, nearly half of which are on exhibition; the Academy general series, 10,500 specimens, of which about 1,000 are exhibited, and the Adam Seybert collection, which is kept separate, 1,825 specimens, while there are 80 falls of meteorites represented.

The duplicate specimens not on exhibition are arranged systematically in storage cases immediately below the exhibition series so that they may be consulted with the greatest ease.

Mr. Gordon has overhauled a large number of mineral and rock specimens received at various times and cleaned and labelled such as are of value. The rock series now in the Academy's possession, including the first and second Pennsylvania Geological Survey collections, amounts to about 19,000 specimens.

The most important accession during the year was the Mrs. W. A. Drown collection, presented by Miss Emily Drown, comprising some 6,000 specimens. It was especially notable for the large number of species represented, a number of which were new to our collection.

ARCHAEOLOGY.

Miss H. N. Wardle has overhauled several thousand specimens mostly belonging to the Haldemann collection, which were stored in the basement, and has cleansed and identified them, entering some 2,000 in the catalogue. Little new material was obtained during the year.

Mr. Clarence B. Moore's expedition during the spring of 1918 explored territory along the Apalachicola River, the Flint River to Bainbridge, Ga., and the Florida coast from St. Andrew's Bay to Crystal River. The result demonstrated how thorough had been his earlier exploration of the same region, as little new material was obtained. Pottery and artifacts regarded as duplicates were presented by Mr. Moore to the Museum of the American Indian, Heye Foundation. Owing to necessary repairs to his boat Mr. Moore was compelled to abandon his usual autumn expedition.

Throughout the year the undersigned Curators have been without the advice and counsel of their associate Maj. Henry Tucker, who since the entry of America into the war has been in the service of his country in the medical corps of the Army.

WITMER STONE, *Chairman,*

HENRY A. PILSBRY.

REPORT OF THE CURATOR OF THE WILLIAM S. VAUX COLLECTIONS,
DECEMBER 1, 1918.

Efforts during the past year, in the direction of securing as many rare and unusual species as possible, have resulted in the addition of no less than 127 species not hitherto represented in the William S. Vaux collection, of which number 87 were purchased and 40 selected from the Drown collection.

This brings the total number of distinct species in the collection up to 804, not including meteorites, hydrocarbons, varieties or doubtful species.

Altogether the number of accessions during the year exceeded 800, of which 104 were purchased, 700 derived from the Drown collection, 3 presented by Mr. Thomas Harvey and 3 presented by Mr. Samuel G. Gordon, who has continued his valuable services in caring for the collection.

Respectfully submitted,

F. J. KEELEY, *Curator Wm. S. Vaux Collection.*

REPORTS OF THE SECTIONS.

BIOLOGICAL AND MICROSCOPICAL SECTION.—The Section held six stated meetings during the year, a reduction of the usual number due to war regulations and the influenza epidemic.

Communications on various subjects were made by members, among whom may be mentioned Messrs. T. C. Palmer, Hugo Bilgram, Dr. Thomas S. Stewart, F. J. Keeley, B. F. Ray, Walter Palmer, Dr. L. A. Faught and C. S. Boyer.

The following officers were elected for the year 1919:

Director.....J. Cheston Morris, M.D.

Vice-Director.....T. Chalkley Palmer.

Recorder and Corresponding Secretary..Charles S. Boyer.

Treasurer.....Thomas S. Stewart, M.D.

Conservator.....F. J. Keeley.

CHARLES S. BOYER, *Recorder.*

ENTOMOLOGICAL SECTION.—Six stated meetings were held during the year, with an average attendance of eleven persons. The deaths of Erich Daecke, a contributor, and Benjamin H. Smith, a member, were announced. Arthur H. Napier and George M. Greene were elected members, and Francis M. James, Louis B. LaPlace, Carl Lorup, A. Reginald Allen and Max Reyher were elected con-

tributors. Interesting communications were made by R. C. Williams, Jr., J. A. G. Rehn, P. P. Calvert, Henry Skinner, Philip Laurent, Herman Hornig, Dr. P. W. Whiting, and Dr. J. Bequaert.

The following officers and committee were elected to serve for 1919:

<i>Director</i>	Philip Laurent.
<i>Vice-Director</i>	R. C. Williams, Jr.
<i>Treasurer</i>	E. T. Cresson.
<i>Conservator</i>	Henry Skinner.
<i>Secretary</i>	J. A. G. Rehn.
<i>Recorder</i>	George M. Greene.
<i>Publication Committee</i>	E. T. Cresson, Philip P. Calvert, E. T. Cresson, Jr.

E. T. CRESSON, JR., *Recorder*.

BOTANICAL SECTION.—The following officers were elected to serve during the year 1919:

<i>Director</i>	Joseph Crawford.
<i>Vice-Director</i>	Alexander MacElwee.
<i>Recorder</i>	John W. Eckfeldt, M.D.
<i>Treasurer</i>	Stewardson Brown.
<i>Conservator</i>	Stewardson Brown.

JOHN W. ECKFELDT, M.D., *Recorder*.

MINERALOGICAL AND GEOLOGICAL SECTION.—The Section held four meetings, with the usual attendance. Prof. Wright discussed the topography of the upper James River; there were also discussions of peat growth, and of Tertiary coal. Other mineralogical and geological matters were discussed.

The Section made six field excursions with an average attendance of eleven. The excursions were not formally announced, but were orally noted. The excursions were all in the crystalline region of Delaware County, except one in that of the Gulph region of Montgomery County.

The deaths of Prof. Carter, Mr. Schumo, Mr. DuBois and Joseph Willcox were announced. They were active members of the Section, and particularly interested in the field excursions. Mr. DuBois was for many years an efficient member of the excursion committee.

<i>Director</i>	Benjamin Smith Lyman.
<i>Vice-Director</i>	F. J. Keeley.
<i>Recorder and Secretary</i>	Wm. B. Davis.
<i>Treasurer</i>	Benjamin Smith Lyman.
<i>Conservator</i>	George Vaux, Jr.

<i>Director</i>	Spencer Trotter, M.D.
<i>Vice-Director</i>	George Spencer Morris.
<i>Recorder</i>	Stewardson Brown.
<i>Secretary</i>	William A. Shryock.
<i>Treasurer and Conservator</i>	Witmer Stone.

PRESIDENT.....	John Cadwalader, A.M., LL.D.
VICE-PRESIDENTS.....	Edwin G. Conklin, Ph.D., Sc.D., Henry Skinner, M.D., Sc.D.
RECORDING SECRETARY.....	Edward J. Nolan, M.D., Sc.D.
CORRESPONDING SECRETARY.....	J. Percy Moore, Ph.D.
TREASURER.....	George Vaux, Jr.
LIBRARIAN.....	Edward J. Nolan, M.D., Sc.D.
CURATORS.....	Witmer Stone, A.M., Sc.D., Henry A. Pilsbry, Sc.D., Henry Tucker, M.D., Spencer Trotter, M.D.
COUNCILLORS TO SERVE THREE YEARS.....	Philip P. Calvert, Ph.D., Frank J. Keeley, Walter Horstmann, T. Chalkley Palmer.

COMMITTEE ON ACCOUNTS.....Charles Morris,
 Samuel N. Rhoads,
 John G. Rothermel,
 Thomas S. Stewart, M.D.,
 Walter Horstmann.

COUNCIL FOR 1919.

Ex-Officio.—John Cadwalader, A.M., LL.D., Edwin G. Conklin, Ph.D., Sc.D., Henry Skinner, M.D., Sc.D., Edward J. Nolan, M.D., Sc.D., J. Percy Moore, Ph.D., George Vaux, Jr., Henry A. Pilsbry, Sc.D., Witmer Stone, A.M., Sc.D., Henry Tucker, M.D., Spencer Trotter, M.D.

To serve three years.—Philip P. Calvert, Ph.D., Frank J. Keeley, Walter Horstmann, T. Chalkley Palmer.

To serve two years.—Charles P. Penrose, M.D., LL.D., Ph.D., Charles Morris, Wm. E. Hughes, M.D., Spencer Trotter (elected Curator).

To serve one year.—Edwin S. Dixon, Robert G. LeConte, M.D., George Spencer Morris, Henry Skinner, M.D. (elected Vice-President).

COUNCILLOR.....George Vaux, Jr.

CURATOR OF MOLLUSCA.....Henry A. Pilsbry, Sc.D.

CURATOR OF WILLIAM S. VAUX COL-

LECTION.....Frank J. Keeley.

ASSISTANT LIBRARIAN.....William J. Fox.

ASSISTANTS TO CURATORS.....Henry Skinner, M.D., Sc.D.,
 Stewardson Brown,
 Edward G. Vanatta,
 Henry W. Fowler,
 James A. G. Rehn,
 Ezra T. Cresson, Jr.

AID IN ARCHÆOLOGY.....Harriet Newell Wardle.

AID IN HERBARIUM.....Ada Allen.

Taxidermist.....David McCadden.

Janitors.....Charles Clappier,
 Daniel Hechler,
 Jacob Aebly,
 Adam E. Hechler.

STANDING COMMITTEES, 1919.

FINANCE.—Effingham B. Morris, John Cadwalader, A.M., LL.D., Edwin S. Dixon, Walter Horstmann, and the Treasurer.

PUBLICATION.—Henry Skinner, M.D., Sc.D., Witmer Stone, A.M., Sc.D., Henry A. Pilsbry, Sc.D., William J. Fox, Edward J. Nolan, M.D., Sc.D.

LIBRARY.—Henry Tucker, M.D., George Vaux, Jr., Frank J. Keeley.

INSTRUCTION AND LECTURES.—Henry Skinner, M.D., Sc.D., Henry A. Pilsbry, Sc.D., Charles Morris, James A. G. Rehn, George S. Morris.

ELECTIONS IN 1918.

MEMBERS.

January 15.—Andrew J. Carty, Annabella E. Richards, Ph.D.

March 19.—Francis R. Cope.

April 16.—Geo. M. Greene.

CORRESPONDENTS.

March 19.—John Henry Comstock of Ithaca, N. Y.; Herbert Spencer Jennings of Baltimore, Frank Rattray Lillie of Chicago, Alfred Goldsborough Mayor of Princeton, N. J., John Campbell Merriam, Ph.D., of Berkeley, Cal., Geo. Howard Parker, Sc.D., of Cambridge, Mass., Charles Richard Van Hise, Ph.D., LL.D., of Madison, Wis.

ADDITIONS TO THE MUSEUM.

1918.

MAMMALS.

DR. J. P. MOORE. Skin and skull of New York Weasel (*Putorius noveboracensis*), Delaware Co., Penna.

ZOOLOGICAL SOCIETY OF PHILADELPHIA. Specimens prepared in the following manner: For mounting (skulls separate): Lion (*Felis leo*) ♂. Indian Antelope (*Antilope cervicapra*) ♂. As skin and skeleton: Orang-utan (*Pongo pygmaeus*). Wild Horse (*Equus przewalskii*) ♀. As skeleton: Warthog (*Phacochoerus africanus*). Indian Tapir (*Tapirus indicus*). As skin and skull: Pinché Marmoset (*Edipomidas adipus*). Texan Eyra Cat (*Felis cacomilli*). Fishing Cat (*Felis viverrina*). Binturong (*Arctitis binturong*). Thibetan Blue Bear (*Ursus prinos*). Sun Bear (*Helarctos malayanus*). Sloth Bear (*Melursus labiatus*). Mexican Raccoon (*Procyon lotor hernandezi*). Common Duiker (*Cephalophus grimmii*). Indian Antelope (*Antilope cervicapra*) ♀. Audad (*Ovis tragelaphus*) young. Coypu Rat (*Myopotamus coypu*). Common Dasyure (*Dasyurus maculatus*). Squirrel-like Phalanger (*Petaurus sciureus*). As skulls: Mandrill Baboon (*Papio mormon*) ♀. Woolly Spider Monkey (*Brachyteles arachnoides*). Humboldt's Woolly Monkey (*Lagothrix lagotricha*). Steller's Sea-lion (*Eumetopias stelleri*). Cape Hyrax (*Procavia capensis*). Lund's Opossum (*Didelphis albiventris*).

BIRDS.

HENRY S. BISSEX. Collection of mounted birds.

MISS EMILY DROWN. Mrs. W. A. Drown's collection of birds' eggs and mounted birds.

J. W. HOLMAN. Two Barred Owls (*Syrnium nebulosum*), West Creek, N. J.

MRS. L. H. PARKS. Collection of North American birds' eggs.

MRS. FRANK SARACOL. Mounted Short-eared Owl (*Asio accipitrinus*).

ZOOLOGICAL SOCIETY OF PHILADELPHIA. Specimens prepared as follows: As skin and skeleton: Black-footed Penguin (*Spheniscus demersus*). As skeleton: Somaliland Ostrich (*Struthio molybdophanes*). As skin: Black Vulture (*Catharista urubu*). As skulls: Canvas-back Duck (*Marila valisineria*). Upland Goose (*Cloephaga magellanica*). Crested Curassow (*Crax alector*). Golden Eagle (*Aquila chrysaetos*). Brazilian Caracara (*Polyborus thurus*). Barn Owl (*Aluco pratincola*).

REPTILES AND AMPHIBIANS.

A. DE W. BERTONI. Small collection of reptiles and amphibians. Puerto Bertoni, Paraguay.

DR. HENRY FOX. Two toads (*Scaphiopus holbrookii*) and one salamander. Clarksville, Tenn.

PHILIP LAURENT. Skink (*Eumecurus lineatus*). Gunntown, Fla.

FISHES.

H. W. AITKEN. Small collection of fishes. Connecticut and Florida.

A. DE W. BERTONI. Small collection of fishes. Puerto Bertoni, Paraguay.

SAMUEL C. CASTNER. Two specimens of Remora (*Leptecheneis naucratis*). Cape May, N. J. Rabbit fish (*Lagocephalus laevigatus*). Cape May, N. J.

FIELD MUSEUM OF NATURAL HISTORY. (By exchange). Thirty-four Atherine fishes.

MUSEUM OF COMPARATIVE ZOÖLOGY. (For determination). Ninety-two loaches and three hundred and ninety-two cyrinoid fishes. India.

PHILADELPHIA COMMERCIAL MUSEUM. Large collection of fishes. Philippine Islands. Many interesting additions to the Academy's collection.

C. T. RAMSDEN. Jar of *Domitator maculatus* (Bloch). Guantnamo, Cuba.

INSECTS.

S. F. AARON. Two katydids, Berks County, Pennsylvania.

W. L. ABBOTT. Three insects, North Carolina.

C. P. ALEXANDER. Twenty crane-fly larvæ, United States.

W. L. MCATEE. Fifteen Psyllidæ, United States.

ANNETTE F. BRAUN. Thirty-eight Microlepidoptera, Ohio.

B. PRESTON CLARK. Twenty-five *Argynnis*, Asia and Africa.

T. D. A. COCKERELL. Fifteen exotic bees. Six fossil insects, one Coccid.

W. J. COXEY. Two moths, Assam.

R. W. DAWSON. Three *Serica*, United States.

W. T. DAVIS. One Orthopteron, Florida.

EMILY DROWN. Large collection of Lepidoptera.

EXCHANGE. Two *Calocala tilonia*, Missouri.

EXCHANGE. Two hundred Ephýdridæ.

J. H. FERRISS. Five Acrididæ, Arizona.

H. FOX. Fifty-five Orthoptera, Tennessee.

J. M. GEDDES. One hundred and twelve insects, British Guiana.

G. M. GREEN. Eight Meloids, Virginia; four Orthoptera, Maryland; two Diptera, United States.

WAGNER GREEN. Eight Coleoptera, United States.

MORGAN HEBARD. Six Blattidæ, Colombia; two Acrididæ, California.

FRANK M. JONES. Forty-one Orthoptera, United States.

H. II. KNIGHT. Thirty-five Hemiptera, United States.

PHILIP LAURENT. Three Orthoptera, Florida.

CHARLES LIEBECK. One Earwig, Canada.

WERNER MARCHARD. Four Orthoptera and Hemiptera, United States.

J. P. MOORE. One Hymenopteron, Utah.

ROBERT K. NABOURS. Five Acrididæ, Texas and Mexico.

J. K. PRIMM. Two Coleoptera, New Jersey.

PURCHASED. Five hundred and seventy-five Orthoptera, Madagascar.

HENRY SKINNER. Three moths, Florida; thirty insects, New Hampshire.

RECENT MOLLUSCA.

DR. W. L. ABBOTT. Forty trays of shells from Haiti and Tennessee.

J. AEBLY. Three lots of marine shells from Greece.

ALABAMA MUSEUM OF NATURAL HISTORY. Two trays of *Lepyrium*.

C. C. ALLEN. Fifty-seven shells from Southeast United States.

AMERICAN MUSEUM EXPEDITION. Seventy African land shells.

CHARLES H. BAKER. Four lots of shells from Florida.

F. C. BAKER. *Amnicola clarkei* Pils. from Oneida Lake, New York.

DR. FRED BAKER. *Tethys californica* Cooper from La Jolla, California.

E. B. BARTRAM. Five trays of shells from Florida.

DR. JOSEPH BEQUAERT. Two hundred and seventy-seven trays of shells from Europe and Africa.

BERNICE PAUAI BISHOP MUSEUM. Thirty-eight lots of *Lyropupa* from the Hawaiian Islands.

S. S. BERRY. Four trays of shells from California and Wyoming.

LOUIS H. BREGY. *Meretrix petechialis* Lam.

PROF. W. A. and E. J. BRYAN. One hundred and ninety-six trays of Hawaiian shells.

E. P. CHACE. Five marine shells from California.

ASA C. CHANDLER. Eight lots of fresh water shells from Oregon.

DR. A. W. CHEEVER. Six trays of New England shells.

G. H. CLAPP. *Liguus solidus* Say from Big Pine Key, Florida.

W. F. CLAPP. Ten trays of land shells from the Philippine Islands and North America.

T. D. A. COCKERELL. Eleven trays of shells from New Mexico.

EMILY COLLINS COLLECTION. *Epitonium pretiosa* Lam.

PH. DAUTZENBERG. Four African land shells.

C. B. DEHAVEN. Twelve marine shells from California.

MISS EMILY DROWN. Four trays of shells.

DR. FLORENTINO FELIPPONE. Two *Mytilus* from South America.

J. H. FERRISS. Three hundred and seventeen trays of shells from southwestern United States.

J. H. FERRISS and L. E. DANIELS. Thirty-five trays of land shells from Arizona and New Mexico.

G. M. GREENE and F. HOMER. *Planorbis corneus rubra* B. from an aquarium in Philadelphia, Pennsylvania.

D. L. BREWER HALL COLLECTION. Thirty-five lots of shells.

J. B. HENDERSON. Seven lots of *Dentalium* from Florida and Cuba.

JUNIUS HENDERSON. Ninety-eight trays of shells from Colorado and Idaho.

A. JACOT. Three land shells from Ithaca, New York.

L. A. KEENE. Eight species of *Unionida* from Illinois.

C. H. KNOWLTON. Two land shells from Vermont.

MRS. A. F. LETSON. Five marine shells from the Hawaiian Islands.

O. S. LEWIS. Four trays of shells from Tennessee, Virginia and Indiana.

BAYARD LONG. Nineteen trays of shells from the Eastern United States.

DR. HENRY LOOMIS. Four hundred and forty-seven lots of Japanese shells (purchased).

H. N. LOWE. Thirty-seven land and marine shells from California.

J. G. MALONE. Three slugs from Oregon.

E. H. MATTHEWS. Four Australian marine shells.

REV. H. E. MEYER. Twenty-two trays of shells.

CLARENCE B. MOORE. Nine trays of shells from Florida.

DR. J. P. MOORE. Two fresh water shells from Utah.

MRS. IDA S. OLDROYD. Ten lots of shells from Western America.

C. R. ORCUTT. Three trays of shells from Texas.

DR. H. A. PILSBRY. Twenty-seven lots of shells from Arizona and the Hawaiian Islands.

DR. H. A. PILSBRY and J. H. FERRISS. Seven trays of Arizona shells.

E. J. POST. Three species of shells from Canada.

PURCHASED. Sixty-three species of land shells.

CLARE W. RAVENEL. Twenty-one species of marine shells from Florida.

DR. EMMET RIXFORD. *Micrarionta wolcottiana* Bart. from Palm Springs, California.

S. RAYMOND ROBERTS. *Corbula contracta* Say from off Nantucket Shoals, Massachusetts.

MARIANO S. ROIG. Sixty-two Cuban marine shells.

C. HENRY RONEY. *Crepidula fornicata* L.

ESTATE DR. B. SHARP. Three lots of shells.

H. H. SMITH. Three land shells from Tennessee.

LLOYD B. SMITH. Twelve land shells from Haiti.

DR. V. STERKI. Four trays of North American land shells.

J. K. STRECKER, JR. Five lots of shells from Texas.

MRS. MARY LUDWIG SUYDAM. Collection of marine shells.

D. THAANUM. Two Hawaiian marine shells.

E. G. VANATTA. Five trays of shells.

BRYANT WALKER. Six lots of shells from Texas and Canada.

MRS. NINA WINCHESTER. Eighty marine shells from the Philippine Islands.

OTHER INVERTEBRATES.

H. W. AITKEN. Several crabs, Connecticut and Florida.

EMILY COLLINS COLLECTION. A barnacle and coral.

C. B. DE HAVEN. *Chthamalus fissus* Dar. from Santa Barbara, California.

DR. FLORENTINO FELIPPONE. Two lots of *Balanus niveus* Dar. from South America.

H. E. HUBERT. *Balanus improvisus* D. from Lake Pontchartrain, Louisiana.

PHILIP LAURENT. Small collection of Crustacea, Florida.

DR. HENRY LOOMIS. Twenty-nine trays of crabs and *Brachiopoda*, purchased.

MRS. MARY LUDWIG SUYDAM. A sponge and corals.

VERTEBRATE FOSSILS.

MISS RUTH ANN SULLIVAN. Mammoth tooth (*Mammut primigenius*), Alaska.

FOSSIL INVERTEBRATE.

S. S. BERRY. *Tetracrita rubescens* Dar. from Pt. Loma, California.

DAVID DALLAM. One slab of *Brachiopoda*.

MISS EMILY DROWN. *Nucula* from England.

E. J. POST. Two trays of *Brachiopoda* from Canada.

LLOYD B. SMITH. *Turritella gabbi* B. and P. from Tierra Nueva, Haiti.

ACCESSIONS: MINERALS.

MORRELL G. BIERNBAUM. Quartz, Rowlandville, Phila., Pa.; Spinel, Franklin, N. J.; Microcline, Frankford, Pa.; Muscovite, Broad and Olney Ave., Phila., Pa.; Copper, Schwenksville, Pa.

MRS. M. B. BRADBURY. Collection of minerals of Dr. N. R. Bradner.

MISS EMILY DROWN. Collection of 6000 minerals.

DR. J. B. S. EGEE. Picrophyll, Bavaria.

HORACE M. ENGLE. Molybdenite and Molybite, Ontario, Canada.

HAROLD EVANS. Pyrite, Moore Sta., N. J.

V. W. FIELD. Cyanite and Sphalerite, Idaho.

HUGH ALEXANDER FORD. Chabazite, Avondale, Delaware Co., Pa.

SAMUEL G. GORDON. Orthoclase, St. Peters, Pa.; Talc, Lafayette, Pa.; Byssolite, Cornwall, Pa.; Ferruginous Quartz, Lehigh Co., Pa.; Aragonite, Sterling Hill, N. J.; Pyrrhotite, MacAfee, N. J.; Calamine, Friedensville, Pa.; Pyrrhotite, Gottschall's Mine, Berks Co., Pa.; Calcite, Stilbite, Chabazite, Laumontite, Calcite, Trap Rock, Berks Co., Pa.; Hematite, Garnet, Knauertown, Chester Co., Pa.; Limonite, Upper Alsace, Berks Co., Pa.; Turgite, Udree's Mine, Berks Co., Pa.; Jefferisite, Brinton's Quarry, Chester Co., Pa.; Chabazite, Natrolite, Lenni, Delaware Co., Pa.; Titanite, Frankford, Pa.; Graphite, Zircon, Stilpnomelane, Chalcopryrite, Hopewell Mine, Warwick, Chester Co., Pa.; Magnetite, Chrysocolla, Aragonite, Pyrite, Chalcopryrite, Jones Mine, Berks Co., Pa.; Limonite, Fleetwood, Berks Co., Pa.; Albite, Paterson, N. J.; Calcite, Amelia, Va.; Albite, Frankford, Pa.; Laumontite, Ward's Quarry, Delaware Co., Pa.; Quartz, Overbrook, Phila., Pa.; Siderite, Ward's Quarry, Delaware Co., Pa.; Orthoclase, O'Neill's Quarry, Frankford, Pa.; Calcite, Trap Rock, Berks Co., Pa.; Deweylite, Magnetite, Lafayette, Pa.; Covellite, Chalcopryrite, Calamine, Phoenixville, Pa.; Stilbite, Frankford, Phila., Pa.; Stilbite, Prehnite, Apophyllite, Trap Rock, Berks Co., Pa.; Wavellite (7 specimens), Beraunite, Hellertown, Pa.; Serpentine, Aragonite, Asbestos, Easton, Pa.; Calcite, Stilbite, Paterson, N. J.; Microcline, Aragonite, Crocidolite, Calcite, Orthoclase, Galena, Pyroxene, Willemite, Garnet, Franklin, N. J.; Kaolin in limonite geodes, Oreland, Pa.

H. HERWEGH. Limonite pseudo-Pyrite, Howard House, Delaware Co., Pa.; four stalactites, Crystal Cave, Kutztown, Berks Co., Pa.

CHARLES W. HOADLEY. Microcline, Valhalla, N. Y.

FRANK P. HOWE. Calamine, Embreeville, Tenn.

THOS. HARVEY. Fifteen minerals from Delaware Co., Pa.

HOWARD KULP. Calcite, Howellville, Chester Co., Pa.

BENTLY R. MORRISON. Chalcopryrite, Falls of French Creek, Chester Co., Pa.; Orthoclase, Falls of French Creek, Pa.

FREDERICK OLDACH. Prehnite, Calcite, Stilbite, Apophyllite, Trap Rock, Berks Co., Pa.

COL. W. A. ROEBLING (by exchange). Amber, Roebling, N. J.; Mixite, Tintic, Utah; Ettringite, Bellerberg, Germany, and Tombstone, Ariz.; Tamarugite, Tarapaca, Chile; Elpidite, Greenland; Svanbergite, Wermland, Sweden; Hibsichte, Aussig, Bohemia; Crestmoreite, Riverside, Cal.

DR. JOHN F. ROSE. Vermiculite, Roseite (4 specimens), West Nottingham, Chester Co., Pa.; Ligniform asbestos, Molybdenite, West Nottingham, Pa.

HARRY W. TRUDELL. Gypsum, Falls of French Creek, Chester Co., Pa.

H. L. WILLIG. Margarite, Pequea Mine, Lancaster Co., Pa.; Picrolite, Chromite, Deweylite, Wood's Chrome Mine, Lancaster Co., Pa.; Talc, White Rock, Lancaster Co., Pa.; Calcite, Wabank, Lancaster Co., Pa.; Limonite pseudo-pyrite, Chestnut Hill, Lancaster Co., Pa.; Galena, Rutile, Chloritoid, Pequea Mine, Lancaster Co., Pa.; Pyrrhotite, Cornog, Chester Co., Pa.; Tourmaline, Smoky Quartz, Gap Mines, Lancaster Co., Pa.; Tourmaline, Welsh Mt., Lancaster Co., Pa.; Cacoxenite, Beartown, Lancaster Co., Pa.; Kaolin, Narvon, Lancaster Co., Pa.; Calcite, Billmeyer Station, Lancaster Co., Pa.; Fluorite, Lancaster Co., Pa.; Silicified Wood, Elizabethtown, Lancaster Co., Pa.; Tennantite, Bamfordville, Lancaster Co., Pa.; Asbestos, White Rock, Lancaster Co., Pa.

H. F. ZERGER. Pyrite, Columbia, Pa.; Andradite, Serpentine, Cornwall, Pa. PURCHASED. For Wm. S. Vaux Collection 104 specimens.

HERBARIUM.

DR. W. L. ABBOTT. Small collection of plants from Doubling Gap, Cumberland Co., Pa.

H. G. ALLEBACH. *Helenium nulfiflorum*, Green Lane, Pa.

WALTER M. BENNER. 14 specimens from Easton, Pa.

O. H. BROWN. 115 sheets of flowering plants, Cape May, N. J.

MACY CARHART. Small series of ferns from New Jersey.

CHARLES C. DEAN. A small collection of local plants.

EXCHANGE. N. Y. Botanic Garden, 123 sheets of Jamaican plants; Gray Herbarium, 556 sheets of Newfoundland and Labrador plants.

H. L. FISHER. *Plantago major*, Annandale, N. S.

C. D. FRETZ. 44 sheets of plants, Bucks Co., Pa.

F. J. KEELEY. *Camplosaurus rhigophius*, Chester Co., Pa.

BAYARD LONG. 30 sheets of *Eragrostis peregrina*, eastern Penn'a and N. J.

J. P. OTIS. 25 local plants and a small collection from California.

HAROLD W. PRETZ. 460 sheets of plants, Lehigh Co., Pa.

PURCHASED by the Academy. 1000 specimens of New England plants. By the Botanical Section 475 New England plants, 170 Florida plants and 350 Californian plants.

GEO. REDLES. Fertile fronds of *Mattencia struthiopteris* from Wissahickon Creek.

WITMER STONE. *Ilex opaca*, Cape May Pt., N. J.

U. S. DEPT. AGRICULTURE. (Through Dr. C. L. Shaw.) Plants from Chester Co., Pa., from herbarium of Dr. Ezra Michener.

ARCHÆOLOGY.

MISS DEWEY. Danee Spear and Belt from South America.

MISS EMILY DROWN. Roman Antiquities, etc.

MRS. L. BROWN HALL. Arrowpoint.

PHILIP INMAN. Arrowpoints from Florida.

CLARENCE B. MOORE. Additions to the Moore Collection.

C. HENRY RONEY. Aboriginal workshop material from near Bethlehem, Pa.

BY PURCHASE. Collection of ethnographica from the Pacific and from South America.



3 2044 093 291 235

